

What is claimed is:

1. An earth leakage breaker for protecting a main circuit against over-current and ground failure, comprising:

5 a main-body case,

a main contact disposed in the main-body case,

a switch mechanism disposed in the main-body case and connected to the main contact for turning on and off the same,

10 an operating handle attached to the switch mechanism for operating the switch mechanism,

15 a leakage tripping device disposed in the main-body case for performing a tripping operation,

an over-current tripping device disposed in the main-body case for performing a tripping operation,

15 a leakage-detection circuit disposed in the main-body case

for detecting a leakage current,

20 a power-supply line connected between the leakage-detection circuit and the main circuit for supplying voltage of the main circuit to the leakage-detection circuit, and

25 a test switch disposed in the main-body case for turning on and off the power-supply line when the switch mechanism turns on and off the main contact.

2. An earth leakage breaker according to claim 1, wherein said test switch is an auxiliary switch attached to the earth leakage breaker.

3. An earth leakage breaker according to claim 1, wherein said test switch is disposed inside the main-body case, and is interconnected to the switch mechanism so that the switch

mechanism turns off the main contact when the test switch turns off the power-supply line.

4. An earth leakage breaker according to claim 1, wherein said test switch is provided with an actuator moved according to an on-off operation thereof and connected to a tripping cross bar of the switch mechanism so that when the test switch is turned off, the tripping cross bar is driven to a latch release position to thereby trip the switch mechanism and the tripping cross bar is held at the latch release position to prevent the main contact from turning on, and the tripping cross bar is released from the latch release position when the test switch turns on the power-supply line.

15 5. An earth leakage breaker according to claim 3, wherein said test switch is provided with an actuator moved according to an on-off operation thereof and connected to a tripping cross bar of the switch mechanism so that when the test switch is turned off, the tripping cross bar is driven to a latch release position to thereby trip the switch mechanism and said tripping cross bar is driven to a latch release position to reset the latch by a reset operation of the handle, and the test switch is returned on through the tripping cross bar.

25 6. An earth leakage breaker according to claim 4, wherein said test switch is a sliding switch or toggle switch having an operating knob, said actuator being disposed on an operating member connected to the operating knob.

7. An earth leakage breaker according to claim 5, wherein said test switch is a sliding switch or toggle switch having an operating knob, said actuator being disposed on an operating member connected to the operating knob.

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8. An earth leakage breaker according to claim 1, further comprising a zero-phase current transformer disposed in the main-case body for detecting an unbalance current in the main circuit, and a main circuit conductor connected to the main contact and passing through the zero-phase current transformer, said test switch being disposed in a space surrounded by the zero-phase current transformer, the main circuit conductor, and a sidewall of the main body case.

15 9. An earth leakage breaker according to claim 8, wherein said test switch includes an operating section facing a window hole formed in an upper cover of the main-body case and is interconnected to a trip cross bar of the switching mechanism for driving the trip cross bar to a latch releasing position and 20 holding the same to open the main circuit when the test switch turns off the power-supply line.

10. An earth leakage breaker according to claim 9, wherein said test switch is provided with, as an interlocking device, an 25 actuator at the operating section thereof moved according to a movement thereof, said actuator interconnecting the test switch and the trip cross bar via an armature of the over-current tripping device.

11. An earth leakage breaker according to claim 9, wherein said test switch is provided with, as an interlocking device, an actuator at the operating section thereof moved according to a movement thereof, said actuator being interconnected with the 5 trip cross bar via a slider of a trip coil unit of the over-current tripping device.

12. An earth leakage breaker according to claim 9, wherein said test switch is provided with an actuator connected to the manual 10 operating section thereof and extending toward the trip cross bar.